

Rate Ratio (IRR) - 1.28, 95% CI:1.09 -1.51) higher rate for number of visits to the office based physicians when compared to males. Blacks had 31% (IRR-0.69, 95% CI:0.53-0.89) lower rate of ambulatory care utilization when compared to Whites. Publicly insured individuals had 66% (IRR-1.66, 95% CI:1.26-2.18) higher rate of ambulatory care utilization whereas uninsured individuals have 37% (IRR-0.63, 95% CI:0.40-0.99) lower rate of ambulatory care utilization than the ADHD patients with private health insurance. **CONCLUSIONS:** Gender, and racial disparities exist in ambulatory care utilization among ADHD patients. Providing some kind of health insurance coverage might help in reducing these disparities and optimizing ambulatory care utilization among ADHD patients.

#### PMH15

##### TRENDS IN PREVALENCE OF ADHD DRUG TREATMENT IN THE NETHERLANDS FROM 2000 UNTIL 2010

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**OBJECTIVES:** ADHD is a major concern since it is one of the most common mental disorders affecting children and adolescents. The prevalence of ADHD has been reported to be increasing in the past decade. We assessed the trends in prevalence of ADHD drug use in the Netherlands from 2000 until 2010. **METHODS:** From the PHARMO database, including amongst others, drug dispensing records of approximately 3.2 million inhabitants in The Netherlands, we selected patients with at least one dispensing of ADHD medication including methylphenidate, dexamphetamine and atomoxetine, between 2000 and 2010. For each calendar year, patients were counted as prevalent ADHD drug users if they received a dispensing for ADHD treatment in the respective calendar year. The number of ADHD drug users in PHARMO was divided by the number of residents in PHARMO and multiplied by the number of inhabitants in the Netherlands, standardized for age and gender. Results were stratified by age groups and gender. **RESULTS:** The prevalence of ADHD drug treatment among males was higher than among females. From 2000 to 2010, the prevalence among children (0-12 years) has increased 2.6-fold in males (from 158 to 410 per 10,000) and 4.5-fold in females (from 27 - 119 per 10,000). The prevalence among adolescents (13-18 years) has increased 4.0-fold in males (170 - 675 per 10,000) and 7.4-fold in females (27 - 200 per 10,000). The prevalence among adults (19+ years) has increased 8.2-fold in males (from 8 - 63 per 10,000) and 10.1-fold in females (from 4 - 43 per 10,000). **CONCLUSIONS:** This study provides a comprehensive overview of trends in prevalence of ADHD drug treatment in The Netherlands. Both in males and females, a continuous increase in prevalence was observed.

#### PMH16

##### MALE/FEMALE INCIDENCE RATIO OF ADHD DRUG TREATMENT IN THE NETHERLANDS FROM 2000 UNTIL 2010

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**OBJECTIVES:** ADHD has become a much debated topic in the last few years. More attention and awareness for ADHD has led to an increase in incidence. Especially awareness for the subtype of ADHD where patients, mostly females, demonstrate predominantly inattentive symptoms, has increased. We determined the male/female incidence ratio of ADHD drug treatment in the Netherlands from 2000 until 2010. **METHODS:** From the PHARMO database, including amongst others, drug dispensing records of approximately 3.2 million inhabitants in the Netherlands, we selected patients with a first dispensing of ADHD medication including methylphenidate, atomoxetine and dexamphetamine in the period 2000-2010. For each calendar year, the male/female incidence ratio of ADHD drug use was determined by dividing the incidence among males by the incidence among females. Results were stratified by age groups. **RESULTS:** Overall, the male/female incidence ratio of ADHD drug treatment decreased from 3.4:1 in 2000 to 1.6:1 in 2010, meaning a growing proportion of female patients. The largest decrease in the male/female ratio was observed among adolescents (13-18 years: from 4.5:1 in 2000 to 1.6:1 in 2010), followed by 9-12 year-olds (from 5.5:1 in 2000 - 2.7:1 in 2010) and 0-8 year-olds (from 6.2:1 in 2000 - 3.5:1 in 2010). Among adults and seniors this ratio fluctuated from 0.9:1 to 2.1:1. Although the incidence among females has increased more over the years, the incidence among males remained higher throughout the study period. **CONCLUSIONS:** This study shows that the proportion of female patients starting ADHD drug treatment is increasing. This is in line with the increased awareness of ADHD among females.

#### PMH17

##### OBESEITY AND RISK OF DEPRESSION/ANXIETY IN CHILDREN AND ADOLESCENTS: A MEDICAL EXPENDITURE PANEL SURVEY STUDY

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**OBJECTIVES:** To examine the association between obesity and depression/anxiety and related expenditures in children and adolescents. **METHODS:** Data from Medical Expenditure Panel Survey (MEPS) longitudinal panels 9, 10, 11 and 12 were combined to analyze the risk of depression/anxiety in a cohort of children and adolescents (aged 6-17 years). Incident depression/anxiety was identified during one year follow-up using Clinical Classification Codes (CCCODEX) for depression (657) and anxiety (651) or by Multum Lexicon Therapeutic Classification Codes for anti-anxiety (067) or antidepressant (249) drugs. Body Mass Index (BMI)-for-age  $\geq$  85th-percentile of the 2000 sex-specific Center for Disease Control (CDC) BMI-for-age growth charts, was considered obese/overweight. Due to possibility of reverse causality, instrument variable model with the BMI of mother and its square as

exogenous measures for overweight status was evaluated. Two stage analyses, however, revealed that overweight status was not an endogenous variable. Consequently, association between obesity and depression/anxiety was evaluated using multivariate logistic regression. The risk of increased depression/anxiety expenditures was examined using a two part expenditure model was used. **RESULTS:** An estimated 3.67 million (95% Confidence Interval (CI): 3.47-3.87) were obese/overweight in national weighted sample 10.34 million children and adolescents. The incidence depression/anxiety among obese/overweight and non-overweight children was 0.95 and 1.75%, respectively. Multivariable analysis of a nationally representative sample of children and adolescents indicated no significant association between obese/overweight status and development of depression/anxiety [Adjusted Odds Ratio (AOR):0.65; 95% Confidence Interval (CI): 0.65-1.37]. In addition, there was no increased risk of depression/anxiety related expenditure (AOR: 1.39; 95% CI: 0.67-2.90), nor the risk of an increased amount of expenditure (t-statistic: -0.41; P-value: 0.19) due to obesity/overweight. **CONCLUSIONS:** Obese/overweight children and adolescents in this nationally representative community sample did not have an increased likelihood of depression/anxiety. Thus, obese/overweight children and adolescents may not always suffer from psychological distress.

#### PMH18

##### FACTORS ASSOCIATED WITH REAL-WORLD INPATIENT USE OF LONG-ACTING ATYPICAL ANTIPSYCHOTICS

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**OBJECTIVES:** Long-acting therapy (LAT) formulations of atypical antipsychotics (AAPs) remove the need for daily medication in the treatment of schizophrenia and may improve outcomes. Little is known about LAT AAP use during inpatient admissions. This study identifies factors associated with LAT AAP use among inpatients with schizophrenia. **METHODS:** A retrospective analysis (2007-2010) of the Health Facts® database (Cerner Corp., Kansas City, MO) identified adult patients with a primary discharge diagnosis of schizophrenia and  $\geq 1$  order for AAP. Factors examined included demographic, clinical, and treatment setting characteristics. A bootstrapping algorithm with multilevel (hierarchical) logistic regression was used to identify factors most strongly associated with LAT AAP exposure. **RESULTS:** A total of 3230 admissions met inclusion criteria; 217 had LAT AAP exposure. Before regression adjustment, key factors with a significantly greater likelihood of LAT AAP use included receiving oral risperidone (85.3% vs 35.0%,  $p < 0.001$ ) and being treated in a facility with  $\geq 500$  beds (48.9% vs 31.5%,  $p = 0.001$ ). Negative associations included Caucasian race (47.9% vs 55.4%,  $p = 0.033$ ), receiving most other oral AAPs (varies by agent), and being treated in a facility with  $< 500$  beds (varies by categorical size). Factors not significantly associated with LAT AAP use included age, use of first-generation antipsychotics, urgent admission, and treatment in a teaching facility. The regression model had good discrimination (c-statistic = 0.85); factors associated with a greater likelihood of LAT AAP exposure were male gender (OR=1.58,  $p = 0.005$ ), diagnosis of chronic respiratory conditions (OR=1.64,  $p = 0.014$ ), affective disorders not meeting criteria for full mood disorder (OR=1.95,  $p = 0.004$ ), and oral risperidone (OR=11.05,  $p < 0.001$ ). Patients using olanzapine (OR=0.64,  $p = 0.057$ ) or antidepressants (OR=0.75,  $p = 0.065$ ) trended toward not receiving LAT AAP. **CONCLUSIONS:** LAT AAP use in the inpatient setting was related to gender, certain chronic conditions, specific AAP and antidepressant use, and facility size.

#### PMH19

##### COMBINATION UTILIZATION PATTERNS AND TREATMENT PREDICTORS IN ADHD IN A COMMERCIALLY INSURED POPULATION

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**OBJECTIVES:** Several stimulant and non-stimulant medications are indicated and used alone or in combination to treat attention deficit hyperactivity disorder (ADHD). Little is known about polypharmacy prevalence and predictors in this population. The objective of this analysis was to describe ADHD medication utilization patterns focusing on combination versus monotherapy. **METHODS:** Health insurance claims from Thomson Reuters MarketScan Commercial Database were analyzed for patients with an ADHD diagnosis (ICD-9 314.0x). Patients included were age  $\geq 6$  as of January 2010, continuously enrolled July 2009 through December 2010, and with a 2010 ADHD medication claim. Medication utilization was measured at the patient-month level during 2010. Generalized-estimating equations were used to account for within-patient correlation between months. Demographic and clinical predictors were explored with atomoxetine (ATX), long-acting stimulants (LAS), and alpha-2-adrenergic agents (A2A). **RESULTS:** ADHD patients (n=268,172) were primarily age 6-17 years old (57.9%) and male (61.2%). ADHD with hyperactivity was present in 14.2%. Of all treatment-months, 10.3% were combination therapy (more than one ADHD medication class in same month). Short-acting stimulants and A2A agents had the highest combination use (45.3%, 54.0% respectively). ATX, LAS, intermediate-acting stimulants, and prodrug stimulants had the lowest percentage combination use (17.9%, 13.6%, 21.8%, 9.9% respectively). ATX combination therapy was less in older patients (age  $> 18$  adjusted odds ratios [AOR] between 0.332-0.829). LAS agents were more frequently used (ages 18-44 AOR 1.079-1.457) and A2A had no association (age  $> 25$  AOR 0.699-1.083). Females were less likely to use combination therapy. Hyperactivity was associated with combination therapy in all three models. Tics/Tourettes was associated with combination therapy for ATX and LAS. **CONCLUSIONS:** Combination therapy rates differed by medication class, as did the demographic and clinical characteristics that significantly pre-